

TEXTRON

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Mr. Joseph T. Martella II, Senior Engineer
Rhode Island Department of Environmental Management
Office of Waste Management
Site Remediation Program
235 Promenade Street
Providence, Rhode Island 02908

RE: Proposed Modification of Trichloroethene (TCE) Indoor Air Action Level – Short Term Response Action, Former Gorham Manufacturing Facility – Parcel A Retail Complex, 333 Adelaide Ave., Providence, RI, Plat 51, Lot 170, Case No. 97-030

Dear Mr. Martella:

As you are aware, in January and February 2009, vapor mitigation systems were installed in the four retail spaces at the Former Gorham Manufacturing Site in Providence. The mitigation systems are being operated as a Short Term Response Action to improve indoor air quality in the retail spaces. The installation and operation of the systems is consistent with the requirements identified in the July 24, 2008 *Order of Approval – Short Term Response Action, Former Gorham Manufacturing Facility – Parcel A Retail Complex, 333 Adelaide Ave., Providence, RI, Plat 51, Lot 170, Case No. 97-030* and the August 7, 2008 *Order of Approval Addendum – Short Term Response Action, Former Gorham Manufacturing Facility – Parcel A Retail Complex, 333 Adelaide Ave., Providence, RI, Plat 51, Lot 170, Case No. 97-030*. Compliance vapor and air monitoring for volatile organic compounds (VOCs) is on-going at the retail spaces per the requirements of the Order of Approval and the Order of Approval Addendum.

The Order of Approval and Order of Approval Addendum identify remedial "action levels" for VOCs which are "the Connecticut Industrial/Commercial Proposed Target Indoor Air Concentrations (TACs) as long as the usage of the site is restricted to industrial/commercial activities." The TACs were published by Connecticut Department of Environmental Protection (CTDEP) in Table 1 and Appendix B of *Proposed Revisions, Connecticut's Remediation Standard Regulations Volatilization Criteria, March 2003*. The TACs were utilized in the derivation of proposed groundwater volatilization criteria and soil volatilization criteria contained in the 2003 document. The 2003 Proposed Revisions have never been incorporated into the Connecticut Remediation Standard Regulations and they are no longer being considered as proposed revisions to those regulations. The CTDEP TACs were incorporated into the Gorham project Order and Order Approval in the absence of RIDEM-published target air concentrations.

Appendix B of the 2003 Proposed Revisions describes the derivation of the TACs as "air concentrations in homes or workplaces that are not expected to cause adverse health effects from chronic exposure." Further, the 2003 document states that "the TACs are set such that the lifetime cancer risk is at the de minimis level (one in a million or 1E-06) and the hazard index (TAC/RfC_m where RfC_m is the RfC modified for the time-weight averaged amount of exposure in the specific scenario) for non-carcinogens is equal to unity." The RfC referred to in that language is the Reference Concentration, a concentration anticipated to be without adverse effects, even for sensitive individuals, for long-term exposure. Appendix B of the 2003 Proposed Revisions also

explains that in some cases, when the risk-based TAC is lower than the indoor air background concentration, the TAC is set at the background concentration.

The Rhode Island Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Short Title: Remediation Regulations) do not contain target air concentrations. However, the Remediation Regulations do specify the risk basis for remedial objectives for substances in impacted media (Section 8.01 Remedial Objectives) as follows.

The remedial objective for each carcinogenic substance does not exceed a 1×10^{-6} excess lifetime cancer risk level and the cumulative excess lifetime cancer risk posed by the contaminated site does not exceed 1×10^{-5} ;

The remedial objective for each non-carcinogenic substance does not exceed a hazard index of 1 and the cumulative hazard index posed by the contaminated site does not exceed 1 for any target organ.

Further, the Remediation Regulations (Section 8.04) clearly indicate that site-specific risk assessment methodology "must be consistent with scientifically acceptable risk assessment practices and fundamentals of risk assessment under EPA's Risk Assessment Guidance for Superfund." The EPA published very recently a Risk Assessment Guidance for Superfund that addresses risk assessment for inhalation exposures. That 2009 guidance is titled *Risk Assessment Guidance for Superfund, Part F, Supplemental Guidance for Inhalation Risk Assessment*.

The 2003 CTDEP risk-based TAC was based on a unit risk (UR) of 1.1×10^{-4} per $\mu\text{g}/\text{m}^3$, which was taken from a 2001 USEPA white paper concerning the toxicity of TCE. In that white paper, the selected UR was identified as the upper end of a range of possible URs for TCE. The USEPA does not currently use that UR value. In addition, the methodology used by CT DEP to calculate the industrial/commercial TAC is not consistent with the 2009 EPA risk assessment guidance for inhalation exposures. Based on this information, the 2003CTDEP proposed TAC for TCE is now outdated.

Currently, the USEPA uses a UR of 2×10^{-6} per $\mu\text{g}/\text{m}^3$ as the basis for its Regional Screening Levels for indoor air in industrial/commercial settings (USEPA, 2009, *Regional Screening Level Table*). The current TCE USEPA Regional Screening Level for Industrial Air is $6.1 \mu\text{g}/\text{m}^3$. This RSL was set at a concentration that corresponds with the de minimis risk level of 1×10^{-6} . Concentrations of TCE in industrial/commercial air below the RSL are considered to have de minimis risk, and in the USEPA Superfund context, would not require further evaluation or action.

The Rhode island Remediation Regulations were modeled after the Massachusetts Contingency Plan. The Massachusetts Department of Environmental Protection (MassDEP) published in 2009 a list of threshold air concentrations for residential settings. For TCE, the MassDEP listed a residential indoor air concentration of $1.4 \mu\text{g}/\text{m}^3$ as the concentration associated with one in one million cancer risk. Extrapolating that residential value to an industrial/commercial value (8 hours per day, 5 days per week, 25 years duration), consistent with the 2009 EPA risk assessment guidance for inhalation exposures, yields an industrial/commercial target air concentration of $7.1 \mu\text{g}/\text{m}^3$ for TCE at the one in one million cancer risk level. This value is very similar to the current USEPA Regional Screening level of $6.1 \mu\text{g}/\text{m}^3$.

Clearly, the current action level for TCE ($1 \mu\text{g}/\text{m}^3$) in the indoor air of the retail spaces (based on a 2003 Draft Proposed Regulatory Revisions document) is inconsistent with current USEPA and Massachusetts industrial/commercial air guidance values and screening levels and with currently employed toxicity values for TCE.

Because USEPA's toxicity information is more up-to-date than the toxicity information used to derive the 2003 CTDEP TACs and because the TAC derivation is not consistent with current EPA guidance for risk assessment of inhalation exposures (a requirement of the Remediation Regulations), Textron is requesting that the compliance monitoring criteria for the Short Term Response Action ("action level") for TCE be updated from 1 ug/m³ to 6.1 ug/m³. This update could be accomplished with an addendum to the Order of Approval that indicates that the USEPA RSL for Industrial Air (6.1 ug/m³) would replace the 2003 CTDEP TAC as the "action level" for the compliance monitoring for the Short Term Response Action.

Please contact me at 401-457-2635 if I can provide additional information or answer any questions concerning this proposed change.

Sincerely,
Textron, Inc.



Gregory L. Simpson
Senior Project Manager

cc: T. Deller, City of Providence
C. Collet, MACTEC Engineering & Consulting, Inc.
Knight Memorial Library Repository
G. Wilson, Kimco Realty Corporation (including tenants)
J. Morgan, The Stop & Shop Supermarket Co. LLC